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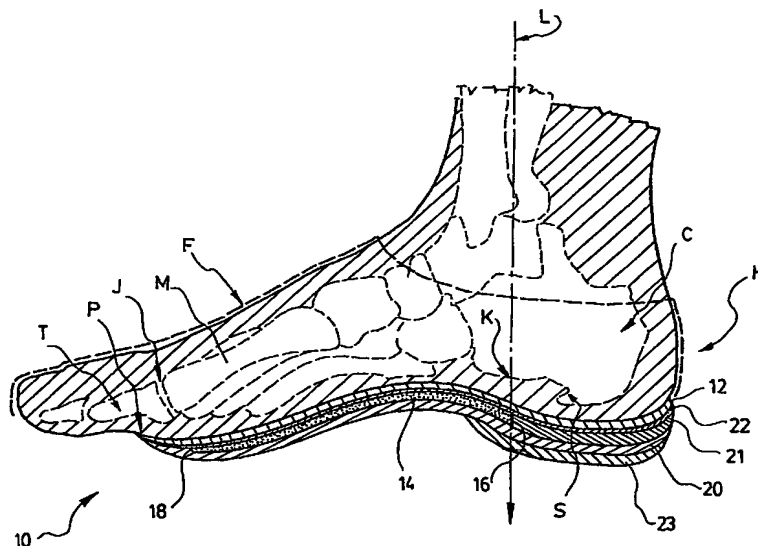
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(54) Title: BIOMECHANICAL CUSTOM MADE FOOT ORTHOSIS AND METHOD FOR MAKING THE SAME



(57) Abstract: A biomechanical custom made foot orthosis (10) and a method for making the same. The orthosis (10) has a thermoformed flexible top layer (12) made of a first moldable synthetic rubber material, and a thermoformed flexible reinforcement core layer (14) made of a moldable core material that is molded onto the top layer, (12). The core layer (14) has a posterior end (16) aligned with a mid anterior plantar prominence (K) of a calcaneus bone (C), and an anterior end (18) aligned near metatarsal-phalangeal joints (J) of the foot. The orthosis (10) also has a thermoformed flexible bottom layer (20) made of a second moldable synthetic rubber material that is molded onto the top layer (12) and the core layer (14). The core layer (14) is more rigid than the top and bottom layers (12, 20). The orthosis (10) corrects anatomic biomechanical deficiencies of the foot and ensuing body deficiencies.



*SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

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# INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/158358 A1 (FRANZENE BRIAN J) 31 October 2002 (2002-10-31) the whole document	1, 14
A	GB 565 070 A (WILLIAM MATHIAS SCHOLL) 25 October 1944 (1944-10-25) the whole document	1, 14
A	US 4 868 945 A (DEBETTIGNIES JEAN) 26 September 1989 (1989-09-26) cited in the application the whole document	1, 14
A	US 4 756 096 A (MEYER GRANT C) 12 July 1988 (1988-07-12) cited in the application the whole document	1, 14

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 6 042 759 A (MARSHALL SCOTT)  28 March 2000 (2000-03-28)  the whole document</p> <p>-----</p>	1, 14

Information on patent family members

International Application No

PCT/02/01927

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002158358	A1	31-10-2002	NONE	
GB 565070	A	25-10-1944	US 2401514 A	04-06-1946
US 4868945	A	26-09-1989	NONE	
US 4756096	A	12-07-1988	US 4669142 A CA 1266377 A1	02-06-1987 06-03-1990
US 6042759	A	28-03-2000	US 5746952 A AU 3978897 A CA 2260078 A1 EP 1011357 A1 WO 9807342 A1	05-05-1998 06-03-1998 26-02-1998 28-06-2000 26-02-1998